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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/020,825 | 12/13/2001 | Mark W. Craig | 00-689 | 8901 |
| 719 | 7590 | 04/25/2005 | EXAMINER | |
| CATERPILLAR INC. 100 N.E. ADAMS STREET PATENT DEPT. PEORIA, IL 616296490 | | | TRAN, HIEN THI | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1764 | |

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|------------------------------|--|
| Office Action Summary | Application No. 10/020,825 | Applicant(s) CRAIG ET AL. | |
| | Examiner Hien Tran | Art Unit 1764 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 12-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 12-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12/13/01</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1764

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1-9, 12-21 in the reply filed on 2/7/05 is acknowledged.
2. Applicant's cancellation of groups II and III, claims 10-11, 22-25, in the reply filed on 2/7/05 is acknowledged.

Drawings

3. The drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the drawings to comply with CFR 1.84(p)(5), e.g. they should include the reference sign(s) mentioned in the specification and vice versa.

Specification

4. The disclosure is objected to because of the following informalities:

On page 3, sections 07-08, it is unclear as to what structure the deflector can be configured to substantially equalize the mass flow rate of the gases.

On page 9, section 29 --vane-- is misspelled.

Appropriate correction is required.

5. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

6. Claims 1-9, 12-21 are objected to because of the following informalities:

In claim 1, lines 4, 5, 6, 9, 13, 17-18 --port-- should be inserted after “inlet” and “outlet” for consistency (note line 3). See the remaining claims likewise.

In claim 8, line 2 “being” should be changed to --is--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 1-9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, it is unclear as to what structure the deflector can be configured to substantially equalize the mass flow rate of the gases across the at least one surface.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-9, 16-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, lines 15-16 it is unclear as to what structural limitation is implied by “the at least one deflector being configured to substantially equalize the mass flow rate of the gases ...”.

In claim 3, line 2 “the polygons” has no clear antecedent basis. See claim 16 likewise.

Art Unit: 1764

In claim 4, line 2 it is unclear as to what structural limitation is implied by “somewhat curved”. See claim 17 likewise.

In claim 8, it is unclear as to what structural limitation is implied by “the at least one deflector being configured to selectively impede the flow of the gases...”.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by Noguichi et al (3,968,645).

Noguchi et al discloses a catalytic converter assembly comprising:

a substrate 47;

a housing 23 having at least one inlet port 7 and at least one outlet port 75;

the at least one inlet port and the at least one outlet port being in fluid communication such that the gases flow through the at least one inlet port into the housing and out of the housing through the at least one outlet port;

the housing 23 receiving the substrate;

the substrate at least partially disposed between at least one of the at least one inlet port and at least one of the at least one outlet port;

at least one deflector 25 having at least one surface; at least one protrusion integral with at least one of the at least one surface; and

Art Unit: 1764

the at least one deflector 25 being movably connected to the housing at a location generally between the substrate and at least one of the at least one inlet port such that the gases flow across the at least one surface as the gases flow through the at least one inlet port into the housing and out of the housing through the at least one outlet port (Fig. 5).

Instant claim 12 structurally reads on the apparatus of Noguchi et al.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. The art area applicable to the instant invention is that of catalytic converter.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582

Art Unit: 1764

1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re Clinton* 188 USPQ 365, 367 (CCPA 1976) and *In re Thompson* 192 USPQ 275, 277 (CCPA 1976).

16. Claims 1-9, 13-21 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Noguchi et al (3,968,645).

With respect to claim 1, the same teachings of Noguchi et al apply.

As best understood, the apparatus of Noguchi et al discloses all of the elements recited in the instant claims and therefore meets the instant claims. Noguchi et al is silent as to whether the deflector may be configured to substantially equalize the mass flow rate of the gases across the at least one surface of the deflector. However, since it is unclear as to what structural limitation applicants are attempting to recite as discussed in the 112 rejection above, the difference between the deflector and that of the prior art cannot be identified by the specification of the instant application. It appears that the deflector of Noguchi et al is capable of equalizing the mass flow rate of the gases across the surface of the deflector.

With respect to the “polyhedron and polygon” in claims 2-3, 15-16 or the “ellipsoid and toroid” in claims 13-14, the shape of the deflector and protrusion is not considered to confer patentability to the claim. It would have been an obvious matter of design choice to select an appropriate shape for the deflector and protrusion, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized

Art Unit: 1764

as being within the level of ordinary skill in the art, absence showing any unexpected results. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

With respect to claims 4, 17, the deflector of Noguichi et al is at least somewhat curved. (note Fig. 4).

With respect to claims 5-6, 18, the deflector of Noguchi et al has a protrusion/ear being integral with the top surface (Fig. 5).

With respect to claims 7, 19, the deflector of Noguchi et al is movably connected to the housing by a pin joint 30 (Fig, 5).

With respect to claims 8, 20, the deflector 25 of Noguchi et al is configured to selectively impede the flow of gases through the housing (col. 4, lines 45-47).

With respect to claims 9, 21, Noguchi et al discloses provision of vane 29.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chang et al and Niebylski are cited for showing state of the art.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1764

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hien Tran

HT
April 20, 2005

Hien Tran
Primary Examiner
Art Unit 1764